

## CLAIMS

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1. A signal processing system comprising:  
first means for distributing an input signal between two or more channels in a  
current mode of operation;  
second means disposed in each of said channels for processing said input signal  
and providing an output signal in response thereto;  
third means for combining the signals output by said processing means; and  
fourth means for controlling said first and said third means.
  2. The invention of Claim 1 further including a radio frequency stage for  
downconverting a received signal and providing said input signal in response thereto.
  3. The invention of Claim 1 wherein said first means includes a mixing  
circuit.
  4. The invention of Claim 3 wherein said mixing circuit further includes  
means for providing automatic gain control for each of said channels individually.
  5. The invention of Claim 4 wherein said means for providing automatic  
gain control operates in a current mode.
  6. The invention of Claim 5 wherein said means for providing automatic  
gain control includes a digital automatic gain control circuit.
  7. The invention of Claim 6 further including means for selectively  
providing differential digital automatic gain control signals in response to a channel  
select signal.
  8. The invention of Claim 3 wherein said mixing circuit further includes  
means for mixing said input signal with a mixing signal.

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9. The invention of Claim 8 wherein said mixing circuit operates in a current mode.

10. The invention of Claim 9 wherein said mixing circuit further includes means for mixing said input signal with plural mixing signals.

11. The invention of Claim 10 wherein said mixing circuit includes at least one Gilbert cell.

12. The invention of Claim 11 wherein said mixing circuit includes a transconductance amplifier.

13. The invention of Claim 12 wherein said mixing circuit includes an automatic gain control circuit.

14. The invention of Claim 1 wherein said second means includes first and second filters disposed in a first and a second of said channels respectively.

15. A receiver comprising:  
a radio frequency stage for downconverting a received signal and providing said input signal in response thereto;

first means for distributing said input signal between two or more channels in a current mode of operation, said first means including a mixing circuit having

a Gilbert cell for each channel,

an automatic gain control circuit for each channel in communication with a respective one of said Gilbert cells, and

a transconductance amplifier in communication with said automatic gain control circuits;

second means disposed in each of said channels for processing said input signal and providing an output signal in response thereto, second means including first and second filters disposed in a first and a second of said channels respectively;

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processing said input signal and providing an output signal in response thereto;  
combining the signals output by said processing means; and  
controlling said first and said third means.

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